



Figure 1

- The first step in learning to splice is to learn to tell the emulsion side of film from the base side.
 - Hold the film up to the light and rotate it slightly. When the light hits the BASE side of the film, it will bounce off brightly because the the base is the SHINY side of the film. The *emulsion* is the DULL side and usually has less gloss or shine to it when light is reflected on to it. (Fig. 1)
 - Although the base of any film stock will be shinier than its emulsion, it is often difficult to tell one from the other on fillms with glossy-looking emulsions - e.g. Ektachrome Commercial and fresh from the can lightstruck positive use throughout the industry for leader.

In this case, the best way to tell emulsion from base is to hold up a short piece of film and look at its curl. (Fig. 1). The emulsion side of the film will be on the inside of the curl.

- If these two methods should fail the emulsion side can always be determined by moistening your lower lip and placing the film against it. The EMULSION side will stick to your lip but the base side will not. CAUTION: The emulsion side will also pull the skin off your lip if you do not moisten your lip well. Never use this method unless all else fails and never use the moisture test on original film. Grease and water cannot be removed from the original.
Always use the first two methods whenever possible. When you put the film in your mouth to determine emulsion position, you immediately brand yourself as a non-professional.
- Learning to handle the film by its edges only is the next important step toward splicing. Film is handled by its edges to avoid getting grease and dirt from your fingers on it. Never pick up film or handle it with your fingers flat on its surface. This rule applies even when you are wearing gloves. Placing your fingers flat on the film is a sure sign of an amateur.
When you have learned to tell emulsion from base and have mastered the techniques of handling film by the edges only, you are ready to learn the mechanics of splicing.
- Any discussion on how to splice must begin with the splicer itself. The tool may vary from a small table model with a single scraper and without heat to a complicated foot splicer with all the latest innovations. But the basic components are all the same.
Since one of the most widely used splicers today is Maier-Hancock 8mm-16mm portable hot splicer originally marketed by Bell and Howell, we will use this splicer as our demonstration model.

The demonstration splicer (Fig. 2) consists of four major sections:

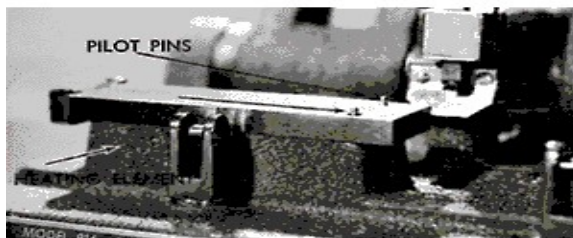


Figure 3

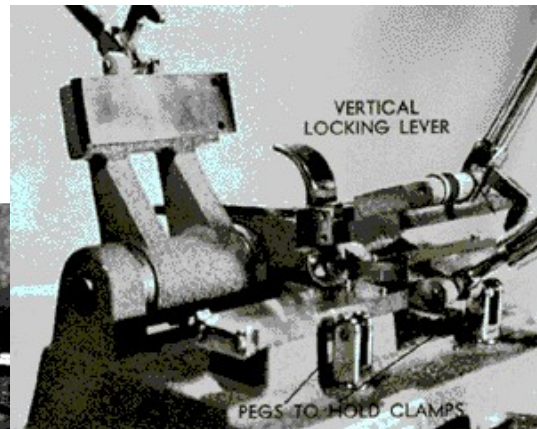


Figure 2



Figure 5

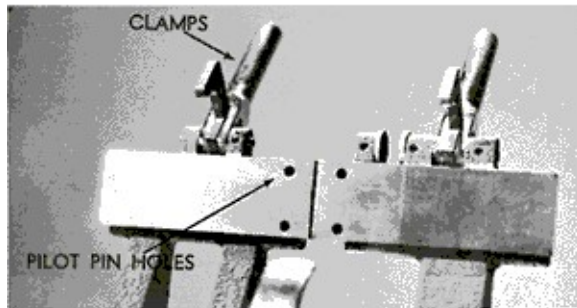


Figure 4

The two sets of blades - right and left - each with upper and lower sections. The ends of the blades have sharp cutting edges which trim off the film ends during the final welding stage. The lower blades have two sets of pilot pins which fit into corresponding holes in the upper blades to hold the film in place during splicing (Figures 3 & 4). These two sets of pins allow splicing with the perforations wither toward or away from the operator.

Our splicing demonstration will involve the back pins only. The basics are the same regardless of which pins are used, PROVIDED that either the front OR the back pins are used since splices can be made in proper alignment *only* if both pieces of film are registered on corresponding pins. (i.e. either both left and right on the back pins or both left or right on the front pins.)

- The locking clamps - one on each upper blade (Figure 4) and one vertical locking lever on the lower right blade only (Figure 2). Locate these parts on your splicer. Move the blades up and down and lock the clamps to see how they work. As you move the blades, lower them into closed position and lock the clamps. The clamps, when properly set, fit into the slotted pegs as either side of the splicer (Fig. 2) to hold the film in place.
- The scraper which is used to remove the emulsion, an essential step in welding the two ends of film together (Fig. 5). The scraper is held taut by a spring and is designed to be used in a front to back motion only. Using the scraper in reverse motion can ruin its cutting edge and will increase the possibility of tearing the film during scraping.
- The heating element, under the immovable left lower blade. Its function is to speed cement drying (Fig. 3)
- Traditionally, the material used to make the ends of the film adhere together has been called cement. It is never called glue or paste. Both of these words are used in the trade to describe poor or amateurish editing. The cement must always be kept fresh. Fresh cement is always quite thin, never thick or gooey. If you have doubts about the freshness of your cement, dump it out

and refill the bottle.

CAUTION: Always clean and refill cement bottles away from the film handling area. If cement is spilled on film, furniture or clothing, it can cause serious damage.

Following is a step-by-step procedure for making consistently good, clean splices.

We suggest that you read the following instructions through. When you know all the parts of the splicer and how each works, come back to Point #1 and start your first splice.

The splicing method to be used is called "splicing to the nearest frame". This means that the last whole frame on either end of the films being spliced will be the first (or last) frame to show after the overhanging ends are cut off and the splice is made.

This splicing method depends on a very important editing principle and that is, ALWAYS CUT YOUR PICTURE IN THE MIDDLE OF THE FRAME. Never cut on the sprocket hole line or diagonally across the frame. Cutting in mid-frame prevents unnecessary frame loss and leaves no doubt as to which frame is to be spliced.

Now for the splicing procedure, point by point:

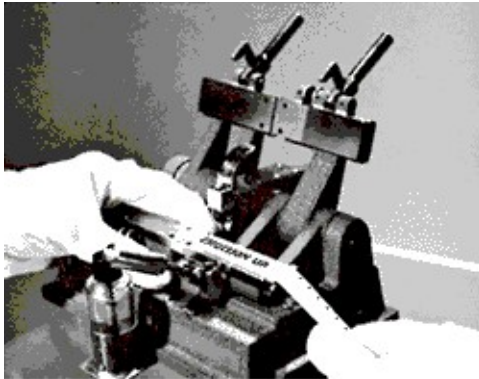


Figure 6

- With both upper blades raised to their highest positions, place the film in the right lower blade and register the next to the last sprocket hole on the back pilot pin (Fig. 6). Remember that we will be using the back pins in all our work. Both right and left pieces of film must be registered on the *back* pins to maintain proper alignment. The film goes into the splicer EMULSION side up and, if single perforated, the sprocket holes go AWAY from you. Note the lower blade positions in figure (6). There is a line here where right and left blades butt together. This will be the splice line and your reference point for registering the proper sprocket hole onto

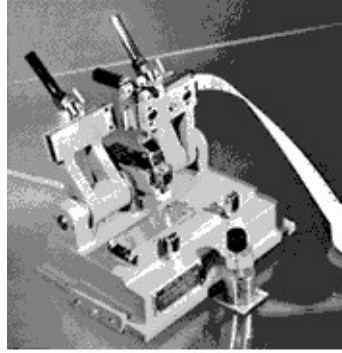


Figure 7

only to

the pilot pins. Always allow one half frame extend beyond the splice line.

Register next to the last sprocket hole on the pilot pin with your left hand. (Fig. 6). Use the tip of your gloved left index finger to secure film on the pin. Make sure that you touch the film only at the upper edge between the sprocket holes and outside the picture area.

As your left finger fits the sprocket hole on to the pilot pin, your right hand holds the other end of the film taut and flush against the guide at the right end of the blade. This step is essential for proper alignment of the splice.

During splicing, the half frame extending beyond the end of the blade will be cut off by the edge of the left blade.

With your right hand holding the film flush against the guide, use your left hand to pull the right upper blade down to stop position. Lock the clamp and the vertical lever. With the film locked between, raise both right blades to upper stop position (Fig. 7).

- Now for the left side. (Fig. 8). Cut the film in mid-frame and place it on the left back pilot pin with the EMULSION UP. Use the tip of your gloved right index finger to fit the next to the last sprocket hole over the pin. Be sure that you touch the film surface only in the space between the sprocket holes and



Figure 8

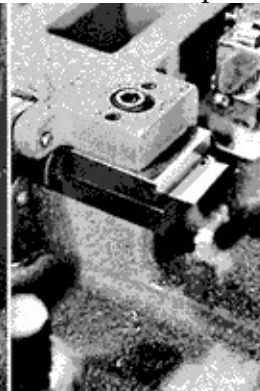


Figure 9

outside the picture area.

- When the film is placed in properly, one-half frame will extend beyond the end of the blade. Hold firm flush against the guide with your left hand and close the

blades with your right hand, locking them with the clamp (Fig. 9).

You are now ready to remove the the emulsion from the the film in the left side, an

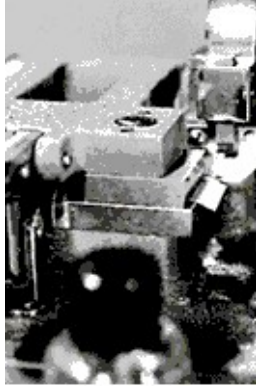


Figure 10

essential step in splicing via the overlap method. The emulsion will be removed from the left side only.

- With the fingernail of your right index finger, bend down the edge of the overhanging half frame (Fig. 10). This will make it much easier for you to scrape off the emulsion without tearing the film.
- You must now work to get the feel of the scraper blade. It is only through practice that you will be able to determine the amount of pressure needed to use it properly. Remember that the blade must be operated in a front-to-back motion only.

Grip the top of the scraper firmly with the thumb and index fingers of both hands, using the base of your left hand as an anchor to help hold the splicer in place (Fig. 11). If this gripping position seems awkward, try using just one hand to control the scraper.

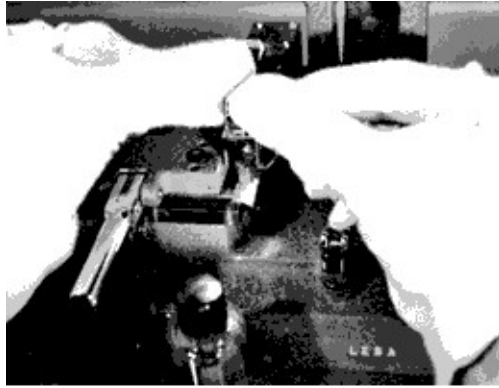


Figure 11

Lift the scraper slightly above the film and pull it to you without touching the film until the blade is just in front of the film edge. With the scraper in this position, lower it until it just touches the film. With a backward motion, scrape the film to remove the emulsion. The base of the film should be left intact. You will need to make several scrapes to get the feel of the scraper and to determine the amount of pressure needed to remove the emulsion without tearing the film. After each practice scrape, unlock the left blades and move the film forward to new cutting positions. Continue to practice until you can clean the emulsion off to the proper depth and consistency with one or two scrapes.

- What is the proper scraping depth? When the film is properly scraped, the splice area will look somewhat like frosted glass.

If the scraped area is clear, you have scraped too deeply and probably too many times.

If the surface is spotty with specks of clear and specks of emulsion, you have scraped with an uneven motion.

If the scraped area is frosted in some spots and clear in others like cords in corduroy cloth, you have scraped too deeply and with an uneven motion.

Proper scraping is done with a smooth, backward motion and the resulting area is evenly frosted from front to back. If the splicer is properly set, you should be able to clear the surface of all emulsion with one scrape, two at the most. Proper scraping width is also important. When the splicer is properly adjusted, the splice area should be scraped free of emulsion from the edge of the blade right up to where the two blades meet. If there is a line of emulsion left against the left side of the splice area, then you are scraping unevenly. To clear the entire area of emulsion, always apply even pressure to the scraper during the smooth, backward motion.

When you have mastered the scraping technique, it is time to apply the cement and make the splice. Since cement deteriorates rapidly, you must work swiftly to apply the cement and lock the blades before it dries.

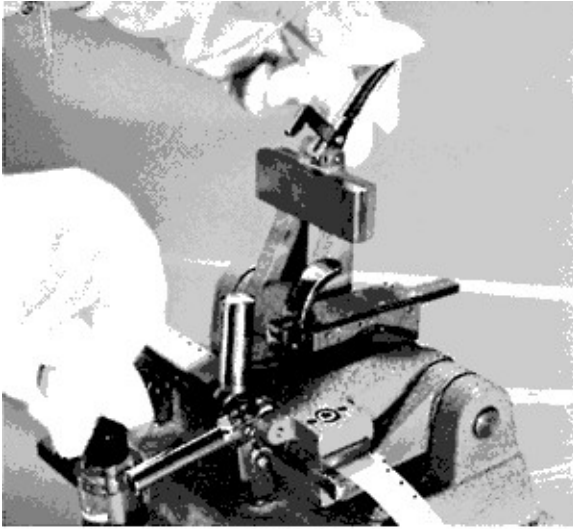


Figure 12

The following eight point process should enable you to make good splices every time with the least loss of time. Read through the following points and be sure that you understand them thoroughly before starting your work.

- Remove the brush from the cement bottle with your right hand, wipe of any excess on the edge of the bottle and apply the cement to the scraped area with one quick stroke.

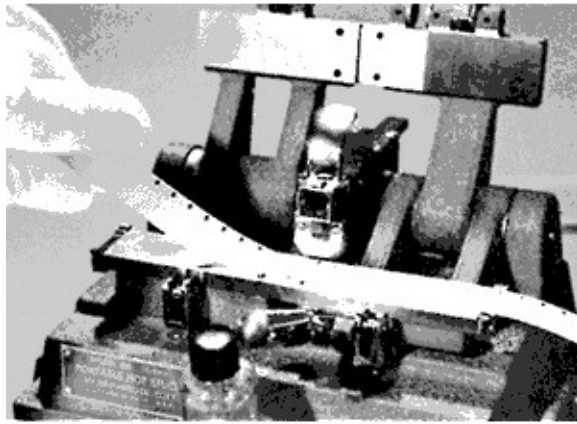


Figure 13

- Return the brush-cap to the bottle and give the cap a half turn to keep it tight enough to avoid spilling the cement as you move the splicer blades.
- With your right hand, bring the right upper blade down with enough force to cut off the extra half-frames on both sides. (The bottom edge of the right blade will cut off the left side. The top edge of the left upper blade will cut off the right side.) As the right blade comes down, it hits the stop pin on the splicer base which causes it to stop exactly even with the left blade. NOTE: Although some force is needed to cut the film during the final process, it is not necessary to slam the blades down. Too much force can cause an alignment problem and damage the splicer.
- Open the left blades with your left hand to let air in to speed drying while...
- Your right hand completes the process of securing the cap to the cement bottle (Fig. 12).
- With the cap secured, open the vertical lock on the right blade.
- Check the edge of the film nearest the closed right blade. If any cement has leaked through, remove it carefully with a lint free cloth. Be sure not to spread the cement as you clean. It is still wet and can smear and damage the film if you are not careful. If this happens, remember, next time, don't use quite so much cement. Too much cement not only causes sloppy splices but it also fills up sprocket holes and causes the film to jump on printers and projectors.
- By the time you finish step 7 above, the splice should be dry and ready to remove from the splicer. When removing a spliced section, always lift up from the LEFT side (Fig. 13). This places the strain *with* the overlap rather than against it. This is particularly important in case you misjudge your drying time and attempt to

remove a splice that is not quite dry. Pulling up WITH the overlap protects the splice from unnecessary stress during the final drying stage.

Checking and rechecking is an important point for the beginning editor to learn. Your check system should begin with a careful evaluation of your splices, while you are learning and as long as you edit film. Here's how to do it:

- To check for proper scraping, hold the spliced section up so that the film forms a curve. If the splice is scraped properly, the film will be rounded like an arc of a circle. If it is scraped too deeply, it will be peaked like the roof of a house.
- If the splice comes apart in your hands, it could be the result of incorrect scraping--too deeply or not deep enough. If you scraped too deeply, the scraped portion will be clear rather than frosted. If you did not scrape deeply enough, there will be spots of emulsion left in the scraped area.
- A splice that comes apart can also be the result of using too little cement. If you follow the old painting rule of wiping the brush on the sides of the bottle as you remove it from the cement, you will get the right amount to make the splice hold without leakage or smearing.
- Splices will also part easily if you do not give them enough drying time. The splice will usually be dry at the end of the eight point procedure outline above in [section V](#), but if you suspect that drying time might be a factor in poor splices, time yourself to see how long it takes you to make a splice. If the heating element on the splicer is properly set, a splice should be dry in 10 or 15 seconds.
- Sometimes a splice will not hold because you have placed the film in the splicer incorrectly. Normal splicing requires that both pieces of film be placed in the splicer EMULSION UP. (During the splicing process, the base of the right film is welded to the the emulsion of the left film.) If your splices repeatedly come apart, check the emulsion position of the film. Review [section II](#) for help on determining emulsion position.

When you feel that you have mastered the art of splicing, make several splices in a row and ask an expert to critique them for you. He may be able to point out defects in your splices that you did not notice.

Before moving on to something else, make experimental splices on as many kinds of film as possible. Some present special problems in determining emulsion from base. Others require extra drying time. You will also find that you will have to make slight variations in your scraping pressure when changing from one film stock to another. The more experience you gain in splicing varied stocks, the more confidence you will feel in your splicing abilities.